

REMARKS

This application has been carefully studied and amended in view of the Office Action dated October 7, 2008. Reconsideration of that action is requested in view of the following.

Claims 17-26 have been added to complete the claim coverage. These claims correspond to the features added in dependent Claims 12-16, but present those features in various combinations and permutations of the specific claims. Thus, for example, Claim 17 corresponds to Claim 13, but is dependent on Claim 12. Claims 18-19 correspond to Claim 14 but are dependent on Claims 13 and 12, respectively. Claims 20-22 correspond to Claim 15, but are dependent on Claims 14, 13 and 12, respectively. Finally, Claims 23-26 correspond to Claim 16 but are dependent on Claims 15, 14, 13 and 12, respectively. Since the total number of claims does not exceed 20 a supplemental fee is not required.

It is respectfully submitted that parent Claim 11 and its dependent Claims 12-26 are patentable over Walter. The problem to be solved by the present invention might be regarded as that of providing a further method for producing adipodinitrile in which the non-reacted pentene nitrile and catalyst can be fed back into the process without the end product and catalyst losses leading to unsatisfactory results. The subject matter of parent Claim 11 differs from the method known from Walter by, for example, the distillation steps (e)-(h), and by the fact that it involves the measure that stream 4 and/or stream 13, which are enriched with pentene nitriles, are first distilled to form a stream depleted of cis-2-pentene nitrile and (E)-2-methyl-2-butene nitrile, and stream 18 is fed back into the reaction.

Walter relates to the hydrocyanation of 3-pentenitrile in the presence of Ni(O) complexes which comprise monodentate phosphines, phosphinites, phosphonites and phosphates (column 2, compilation of formulae) to adiponitrile (AND). In this process, Lewis acids are added as promoters (column 3, lines 63 to 75 and column, lines 1 to 15).

The reaction effluent of the hydrocyanation is admixed with an extractant. The extractants used are paraffins and cycloparaffins (column 3, lines 50 to 62). In the working examples, n-heptane and cyclohexane are used.

After addition of the extractant and mixing of the effluent, two liquid phases form:

The Ni(O) complex and the phosphorus ligands are present predominantly in the extractant phase. The second liquid phase comprises AND, unconverted pentenenitrile, 2-methylglutaronitrile and the degradation products of the Ni(O) complex and of the phosphorus ligands.

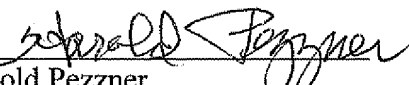
In order to bring about a separation into two liquid phases after the extraction, the molar ratio of unconverted mononitriles to dinitriles must be less than about 0.65. This can be achieved by three different methods (column 1 last two lines to column 2 lines 1 to 17).

- Pentenenitrile conversion in the hydrocyanation of at least 60%
- In the case of lower pentenenitrile conversion, removal by distillation of a portion of the unconverted pentenenitrile
- Addition of AND to the reaction mixture

The Ni(O) complex and the phosphorus ligands are obtained from the extractant phase by distilling the extractant off (page 9, lines 44 to 46).

It should be clear from the above that the process defined in parent Claim 11 is not only lacking in Walter, but would not be obvious in view of Walter. Accordingly, it is respectfully requested that the rejection of Claim 11 and its dependent claims should be reconsidered and that those claims should be allowed.

Respectfully submitted,

By 
Harold Pezzner
Registration No.: 22,112
CONNOLLY BOVE LODGE & HUTZ LLP

1007 North Orange Street
P.O. Box 2207
Wilmington, Delaware 19899
(302) 658-9141
(302) 658-5614 (Fax)
Attorney for Applicant

642809